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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,658

10/27/2006

Karlheinz Brunner

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QUARLES & BRADY LLP
411 E. WISCONSIN AVENUE
SUITE 2040
MILWAUKEE, WI 53202-4497

EXAMINER

SAIDHA, TEKCHAND

ART UNIT

PAPER NUMBER

1652

MAIL DATE

DELIVERY MODE

08/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/531,658		BRUNNER ET AL.	
	Examiner		Art Unit	
	Tekchand Saidha		1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9, 10 and 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6-8, 11-14, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 3 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/15/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claim amendment filed 2/21/2007 is acknowledged. Claims 1-20 are present.

2. ***Election***

Applicant's election of Group I (claims 1-8, 11-14 & 19-20), drawn to a process for the enzymatic synthesis of oil and /or fat with simultaneous enzymatic formation of fatty acid esters is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

There was an inadvertent mistake in the grouping of claims as per the Office action mailed June 25, 2008. The correct grouping of the claims is as follows:

Group I, claims 1-8, 11-14 & 19-20, drawn to a process for the enzymatic synthesis of oil and /or fat.

Group II, claims 9-10 & 15-18, a device for carrying out the process for the enzymatic synthesis of oil and /or fat.

3. A telephone call was made to Applicants' representative Daniel G Radler regarding this correction.

4. Elected Group I (claims 1-8, 11-14 & 19-20), drawn to a process for the enzymatic synthesis of oil and /or fat, are being considered in this examination.

5. **Claims withdrawn** :

Claims 9-10 & 15-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. ***Priority***

Acknowledgment is made of applicants' claim for priority based on an application filed in EPO on 6/21/2001 and in Germany on 11/20/2001. Certified copies of the priority documents have been received.

7. ***Abstract***

*This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

*The abstract should be in narrative form and generally limited to a single paragraph within the range of 50 to 150 words [in length since the space provided for

the abstract on the computer tape by the printer is limited]. The form and legal phraseology often used in patent claims, such as "means" and "said", should be avoided in the abstract. The abstract should sufficiently describe the disclosure to assist readers in deciding whether there is a need for consulting the full patent text for details. MPEP 608.01(b).

A single paragraph abstract is required.

8. ***Specification***

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

9. ***Claim Rejections - 35 USC § 112*** (second paragraph)

Claim 2 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, lines 1-2, recites the phrase '..alcohol is used in an excess of 2 to 100%'. This is a range – which appear to be above the maximum of 100%. It is suggested to check the specification for a suitable correction. Further such high level of alcohol will kill the lipase enzyme. Correction is required.

10. ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6, 7, 8, 11-14 & 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Buhler [Fat Science Technology, 89(14): 598-605 (1987), cited in PTO-1449]. Buhler et al. teach

Claims 1, 4, 6, 7 are drawn to a process for the enzymatic synthesis of oil and /or fat with simultaneous enzymatic formation of fatty acid esters using lipases acting as biocatalysts and alcohols, especially n- and iso-alcohol. This means that any other alcohol may also be used, example glycerol. Claims 11-14 are drawn to a process for the enzymatic synthesis of oil and /or fat with simultaneous enzymatic formation of fatty acid esters using lipases acting as biocatalysts and glycerol.

Buhler et al. teach enzymatically catalyzed reactions, especially in the pharmaceutical field, the product-added value to be derived from the fat-splitting process is low. On the other hand fatty acids have a remarkable market volume. Continuous processing, with reuse of the enzyme, seems to be the biotechnological method of choice. In order to achieve high space-time-yields, carrier fixation of a lipase may be unfavorable due to mass transfer limitations, especially in the case of two-phase reaction systems. Huhler develop a method for the continuous use of lipases without carrier fixation. Since the enzyme is enriched at the phase boundary (fat/water) where the reaction takes place, a micro-emulsion is desirable, and phase separation is necessary for product isolation and for recovery of the enzyme. This was accomplished by the use of two stirred tank reactors and two continuously operating centrifuges or polishing centrifuges. The conditions were selected so that about 90% of the pure aqueous phase containing glycerol (first stage), and about 90% of the pure fat phase containing fatty acids "(second stage), were separated. By this series of two incomplete separations it was possible to recycle about 90 % of the enzyme together with the interfacial layer. This procedure allows a kinetically and thermodynamically desirable counter-current flow of the fat and the aqueous phases. See Figures 1-13, for the degree of hydrolysis, reaction rate, the process scheme, enzyme recycling, use of glycerol (an alcohol) and the various variations in the process steps. The reference anticipates the claims.

11. No claim is allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tekchand Saidha whose telephone number is (571) 272 0940. The examiner can normally be reached on 8.30 am - 5.00 pm. If attempts to

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reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nashaat Nashed can be reached on (571) 272 0934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tekchand Saidha/
Primary Examiner, Art Unit 1652
Recombinant Enzymes, 02A65 Remsen Bld.
400 Dulany Street, Alexandria, VA 22314
Telephone: (571) 272-0940
August 14, 2008